NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

FIREBREAK

(Feet)

CODE 394

DEFINITION

A strip of bare land or vegetation that retards fire.

PURPOSES

- To prevent the spread of wildfire.
- To control prescribed burns.

CONDITIONS WHERE PRACTICE APPLIES

All land uses where protection from wildfire is needed or prescribed burning is applied.

CRITERIA

General Criteria Applicable to All Purposes

Firebreaks may be permanent or temporary and shall consist of fire-resistant vegetation, non-flammable materials, bare ground, or a combination of these.

Firebreaks will be of sufficient width and length to contain the expected fire

Firebreaks will be located to minimize risk to the resources being protected, including locating on the contour where practicable to minimize risk of soil erosion.

Apply erosion control measures to prevent sediment from leaving the site.

Comply with applicable federal, state, and local laws and regulations, during the installation, operation and maintenance of this practice.

Permanent Firebreaks

Plant species selected for permanent firebreaks will be noninvasive, comprised of attributes making them capable of retarding fire, and easy to maintain. Bluegrass, clover, or a bluegrass/clover mix are the most desirable for permanent firebreaks. See Plans and Specifications for recommended seeding rates. If another seed mix is desired refer to standards for CONSERVATION COVER (327), PASTURE AND HAYLAND PLANTING (512) or CRITICAL AREA PLANTING (342). Manage to reduce residue and thatch accumulation by grazing, haying or mowing and removal of all clippings prior to burn. (Note that bluegrass is undesirable in prairie restoration areas and a temporary firebreak, described below, would be a better choice.)

Temporary Firebreaks

When using tillage to create a bare soil firebreak work all residue away from the burn area or completely incorporate into the soil. If necessary, rake and/or burn ("blackline") to remove residue from the firebreak not more than one week before conducting a prescribed burn. See Plans and Specifications for a description of blacklining. Prepare tilled firebreaks well in advance of anticipated burn dates. If any portion of the firebreak tends to be saturated plan to till when soil is as dry as possible or frozen.

Mowed firebreaks will only be used in conjunction with practices that remove residual fuel, such as raking, leaf blowing or blacklining, to produce a fuel free zone.

Wetlines will only be used in conjunction with other kinds of firebreaks (e.g. mowed firebreaks) to enhance their effectiveness or reduce fire intensity.

Chemical and foam retardant lines can be very effective firebreaks but require specialized

material, equipment and personnel. Chemical retardant can be made by mixing a 10% solution of 10-34-0 or similar fertilizer (1 gallon of fertilizer to 9 gallons of water). Spray the above mix on firebreak area and allow to dry. Application must be made immediately prior to igniting the burn.

Firebreaks in Forestland Areas

Use leafblowers to remove leaves and small branches from existing firebreaks.

Rake fuel away from dead or hollow trees within 100 feet of firebreaks to prevent dead or hollow trees from igniting or falling across firebreaks.

CONSIDERATIONS

Use barriers such as streams, lakes, ponds, rock cliffs, roads, field borders, skid trails, landings, drainage canals, railroads, utility right-of-ways, cultivated land, or other areas as existing firebreaks.

Attempt to locate firebreaks near ridge crests and valley bottoms. If winds are predictable, firebreaks should be located perpendicular to the wind and on the windward side of the area to be protected.

Avoid repeated use of cultivated bare soil firebreaks which are susceptible to erosion and weed invasion. Consider permanent firebreaks if repeated use is likely in the same location. Note that tillage is undesirable within prairie restoration areas since it destroys the desired vegetation and allows undesirable plant species to invade.

Consider the selection of native plant species that will enhance the needs of wildlife in the area and are not invasive.

Design and layout should include multiple uses.

Consider cultural resources and environmental concerns such as threatened and endangered species of plants and animals, natural areas, and wetlands.

PLANS AND SPECIFICATIONS

Specifications for applying this practice shall be prepared for each site and recorded using approved specification sheets, job sheets, technical notes, and narrative statements in the conservation plan and the burn plan, or other acceptable documentation. Document location and description of all firebreaks on Job Sheet 338-JS, Prescribed Burning Plan.

Recommended Seeding Rates for Permanent Firebreaks

Bluegrass	10-15# PLS /ac
	or
Bluegrass	10# PLS /ac
plus Alsike clover	3# PLS/ac
or Ladino clover	1# PLS/ac
	or
Alsike clover	5# PLS/ac
Ladino clover	2# PLS/ac

Minimum width of firebreaks will be 2X the height of the tallest herbaceous vegetation in the area to be burned or 8 feet, which ever is greater.

Blacklining is the enhancement of an existing firebreak by raking fuel into a narrow windrow and burning the windrow under prescribed conditions. Perform blacklining within one week of scheduled burns when wind speeds are under 10 mph and relative humidity over 40%. Use wetlines (parallel strips saturated with water) to contain a blackline fire.

Firebreaks can be made more effective by “fire intensity reduction mowing”. Strips of vegetation 8 to 15 feet wide in the burn area, adjacent to the firebreak, are mowed to a height of 10 to 15 inches. Flame length and heat intensity are greatly reduced, especially in tall stands and high fuel loads. Be sure mowed material does not become windrowed or concentrated. Consider using this technique adjacent to areas where burn crew members may be located, such as backfire and flank lines.

OPERATION AND MAINTENANCE

Hay, graze or mow and remove residue in vegetative firebreaks to avoid a build-up of excess litter and to control weeds.

Inspect all firebreaks for woody materials such as dead limbs or blown down trees and remove them from the firebreak.

Inspect firebreaks annually and rework bare ground firebreaks as necessary to keep them clear of flammable vegetation.

Repair erosion control measures as necessary to ensure proper function.

Access by vehicles or people will be controlled to prevent damage to the firebreak.

Bare ground firebreaks, which are no longer needed, will be stabilized and revegetated. See practice standard CONSERVATION COVER 327.

REFERENCES

Using Prescribed Fire on Illinois Grasslands, IL Ecological Sciences Technical Note No.2. USDA-NRCS, Champaign, IL.

Prescribed Burning Guidelines in the Northern Great Plains. Higgins, Kenneth, F., Arnold D. Kruse, and James L. Piehl, 1989. US Fish and Wildlife Service and Coop. Ext. Service, So. Dakota state Univ., USDA. Pub. EC 760, 36 pp. http://www.npsc.nbs.gov/resource/tools/burning/burning.htm

Prescribed Burning: Planning and Conducting. Kansas St. Univ. Exten. Pub. L-664, 1996. http://www.oznet.ksu.edu/library/crpsl2/L664.pdf